

In January 1997, groundwater samples taken from recently installed monitoring wells south of the Brookhaven National Laboratory (BNL) High Flux Beam Reactor (HFBR) indicated tritium levels in excess of the Environmental Protection Agency (EPA) limits for drinking water. The HFBR remains shut down pending completion of a process established by the Secretary of Energy to seek stakeholder input to assist in the decision on the future of HFBR.

On January 27, 1997, the Assistant Secretary for Environment, Safety and Health (EH) dispatched a team to perform an independent oversight evaluation of the Department of Energy (DOE) and BNL activities related to the recovery from tritium contamination in the groundwater. The January 1997 evaluation was followed closely by an Office of Oversight integrated safety management evaluation at the Brookhaven Site.



**The Office of Oversight conducted a followup review of groundwater tritium contamination at the BNL HFBR.**

The Office of Oversight has committed to continue to follow the DOE and BNL tritium remediation activities to ensure that the tritium contamination problem is successfully resolved. Accordingly, Office of Oversight personnel review key documents on an ongoing basis and periodically visit the site to evaluate progress. As one part of the ongoing followup effort, Oversight sent a team of technical specialists to BNL August 19-21, 1997, to review progress by DOE and BNL. The Oversight followup review team focused on the effectiveness of DOE

and BNL in identifying and eliminating the source of the tritium leak and mitigating the tritium groundwater plume at the HFBR. Although focusing primarily on the DOE and BNL efforts related directly to the HFBR tritium plume, the Oversight team also reviewed related DOE and BNL groundwater monitoring and environmental protection initiatives.

This report is intended as a complement to the February 1997 Office of Oversight report entitled *Interim Report on the Office of Environment, Safety and Health Oversight of Groundwater Tritium Plume Activities*, which documents the results of the initial independent oversight review of the groundwater tritium contamination. The February 1997 report provides background information about BNL, the HFBR, the history of the efforts to install monitoring wells, tritium and its health effects, other environmental remediation efforts at BNL, and the initial efforts to characterize and eliminate the leak and determine how to remediate the plume. As discussed in the February 1997 report and the subsequent integrated safety management evaluation report, weaknesses in safety management programs at BNL contributed to delays in detecting groundwater tritium contamination at the HFBR.



**Horizontal Drilling To Detect Contamination beneath the Fuel Pool at the High Flux Beam Reactor**

Although this report focuses exclusively on the safety management issues related to tritium groundwater contamination at the HFBR, EH is also continuing to follow up on other identified safety management issues through other means.

This followup review includes an assessment of DOE and BNL progress on the key elements of the tritium remediation effort, including:

- Project management
- Source management and HFBR modifications
- HFBR tritium plume characterization and mitigation
- Groundwater and environmental management systems.

The last item in the above list addresses actions taken specifically in response to the HFBR tritium plume and the broader effort to improve groundwater management and environmental monitoring on a sitewide basis.